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10 *SPACE DATA CORPORATION*

11
12 UNITED STATES DISTRICT COURT
13 FOR THE NORTHERN DISTRICT OF CALIFORNIA
14 SAN JOSE DIVISION

15 SPACE DATA CORPORATION,

16 Plaintiff,

17 v.

18 ALPHABET INC., GOOGLE LLC, and
19 LOON LLC,
20 Defendants.

Case No. 5:16-cv-03260-BLF (NC)

REFILED: ECF NOS. 581-8; 582-6; 582-10; 582-14; AND 582-16 (PER COURT ORDER AT ECF NO. 617)

Courtroom: 3, Fifth Floor
Judge: Hon. Beth Labson Freeman

Date Filed: June 13, 2016
Trial Date: None Set

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18 ALPHABET INC., GOOGLE LLC, and
19 LOON LLC,

20 Defendants.

Case No. 5:16-cv-03260-BLF

**PLAINTIFF SPACE DATA
CORPORATION'S OPPOSITION TO
DEFENDANTS' MOTION IN LIMINE
NO. 3 REGARDING LOON AND
SPACE DATA VALUATIONS AND
GOOGLE'S TOTAL SIZE, WEALTH,
AND OVERALL REVENUES**

Date: July 19, 2019
Time: 9:00 a.m.
Judge: Hon. Beth Labson Freeman
Dept.: Courtroom 3 – Fifth Floor

Date Filed: June 13, 2016
Trial Date: August 5, 2019

1 **I. INTRODUCTION.**

2 Google's Motion *in Limine* No. 3 assumes its premises. Google says that the question
3 of exemplary damages is not for the jury. Google MIL No. 3 at 5:9-24. Google's motion to
4 exclude Google's finances turns on this premise exactly. If Google's premise is wrong, then
5 the motion is wrong. And wrong it is.

6 In a trade secret case tried in federal court on an underlying state statute, whether the
7 defendant's misappropriation was willful and the quantum of exemplary damages are jury
8 questions. The federal courts view these as procedural questions, governed by federal law.
9 These courts have firmly held that the Seventh Amendment requires that these issues go to
10 the jury.

11 Google understood this once. As a trade secret plaintiff in federal court, this is
12 exactly the position Google took in the *Waymo LLC (Google) v. Uber Tech., Inc.* case before
13 Judge Alsup. *See* § II, below.

14 Given that the fact and quantum of exemplary damages go to the jury, the evidence
15 Google seeks to exclude is a required element of Space Data's case. Putting this evidence on
16 is not volitional; it is required. *See* § II, below.

17 **II. THE LAW: THESE ARE JURY QUESTIONS IN FEDERAL COURT.**

18 While the Ninth Circuit has not addressed the question of whether a federal jury
19 determines the entitlement and quantum of exemplary damages, other courts have. In *Jones*
20 *v. United Parcel Service, Inc.*, a case Google relied on extensively in the *Waymo* dispute, the
21 court found that the jury decided both questions as federal law governed, and the Seventh
22 Amendment right to jury trial, as indicated by Supreme Court decisions, "includes the right
23 to a jury determination regarding the amount of punitive damages." *See Jones v. United*
24 *Parcel Service, Inc.*, 674 F. 3d 1187, 1206 (10th Cir. 2012) (addressing the federal punitive
25 damages jury right in the context of a state retaliatory discharge claim). The Fourth Circuit
26 addressed this precise question, in the context of Maryland's trade secret statute, and reached
27 exactly the same conclusion. *See Trandes Corp. v. Guy F. Atkinson Co.*, 996 F.2d 655, 666
28

1 (4th Cir. 1993) (“Although [defendant] correctly interprets [MUTSA], it overlooks the fact
 2 that, in federal court, any award of punitive damages presents a factual question that must be
 3 resolved by the jury. Consequently, the district court properly submitted the issue of punitive
 4 damages to the jury”).

5 Google understood this point once. In the *Waymo* case, and as a trade secret plaintiff
 6 in federal court, Google insisted that the jury decide the amount of exemplary damages. *See*
 7 Declaration of Spencer Hosie (“Hosie Dec.”), Ex. 29 (Waymo’s Submission in Response to
 8 Defs. Br. on the Penultimate Jury Instructions) at 3:28 (“The Seventh Amendment requires
 9 that the jury decide the amount of exemplary damages”), 4:1-14 (discussing *Jones*) & 4:24-
 10 25 (“The California rule assigning exemplary damages to the jury is procedural, not
 11 substantive”).

12 The cases Google cites do not address the issue of whether federal or state procedural
 13 law governs the right to jury trial in federal court. Both cases involve post-verdict requests
 14 for CUTSA enhancement, which begs the issue. *See Mattel, Inc. v. MGA Entm’t, Inc.*, 801 F.
 15 Supp. 2d 952, 952 (C.D. Cal. 2011); *O2 Micro Int’l Ltd. v. Monolithic Power Sys., Inc.*, 399
 16 F. Supp. 2d 1064, 1068 (N.D. Cal. 2005).

17 On DTSA, Google will argue that the statute uses the word “court.” But this word is
 18 used to describe the basic determination of relief, including underlying damages. *See* 18
 19 U.S.C. § 1836(b)(3) (“REMEDIES ... a court may ... award ... damages for actual loss
 20 caused by the misappropriation ... damages for any unjust enrichment ... award exemplary
 21 damages ...”). (In this regard DTSA’s language and structure departs from CUTSA’s.) It is
 22 beyond dispute that the jury determines the basic entitlement to compensatory damages, and
 23 hence the word “court” cannot mean what Google says it means. In analogous situations, the
 24 U.S. Supreme Court has upheld a federal plaintiff’s right to a jury trial on **all** aspects of
 25 punitive damages. *See Feltner v. Columbia Pictures Television, Inc.*, 523 U.S. 340 (1998)
 26 (holding that despite the use of the word “court” in Section 504(c) of the Copyright Act,
 27 plaintiff had a Seventh Amendment right to a jury trial “on all issues pertinent to an award of
 28

1 statutory damages”) (Section 504(c) includes an enhancement provision); *Curtis v. Loether*,
 2 415 U.S. 189, 195 (1974) (“We think it is clear that a damages action under [Section 812 of
 3 the Civil Rights Act] is an action to enforce ‘legal rights’ within the meaning of our Seventh
 4 Amendment decisions ... More important, the relief sought here—actual and punitive
 5 damages—is the traditional form of relief offered in the courts of law”). (Additionally, the
 6 Eleventh Circuit’s DTSA pattern jury instructions gives the amount question to the jury. *See*
 7 *Hosie Dec.*, Ex. 30).

8 In short, as Google itself has robustly advocated, the fact and quantum of exemplary
 9 damages both go to the jury. Under California substantive law, Space Data must put in
 10 evidence of Google’s financial condition as a required element of Space Data’s case. *See*
 11 *Robert L. Cloud & Assc., Inc. v. Mikesell*, 69 Cal. App. 4th 1141, 1151 (1999) (“[Defendant]
 12 challenges the award of punitive damages by correctly pointing out that ... an award of
 13 punitive damages must be supported by meaningful evidence of the defendant’s financial
 14 condition”); *O2 Micro.*, 399 F. Supp. 2d at 1079; *Mattel*, 801 F. Supp. 2d at 953.

15 **III. SPACE DATA’S ENTERPRISE VALUE.**

16 Google also seeks to exclude evidence going to Space Data’s enterprise value.
 17 Google MIL No. 3 at 4:3-13. Google says that this evidence is irrelevant and a 403
 18 distraction. But Google will tell the jury that Space Data is a failed company pursuing this
 19 case as a lottery ticket to revive a business otherwise lost.

20 Space Data is not a failed company. It has a robust ongoing business, and owns
 21 extraordinarily valuable spectrum. If Google wants to argue that Space Data is a failed
 22 company, then surely Space Data has the right to prove Google wrong by referring to Space
 23 Data’s own economic circumstances.

24 **IV. LOON PROJECTIONS AND INVESTMENT.**

25 Loon finally argues that Loon’s financial projections and Google’s investment in
 26 Loon should be excluded as irrelevant and prejudicial. *See* Google MIL No. 3 at 3:26-28.
 27 But Google will argue that Space Data had no trade secrets, in part because nothing Space
 28

1 Data knew had independent economic value. To quote Google:

2 As to the Trade Secret claims, Google identifies the following disputed facts
3 for trial:

4 4. Whether and to what extent the Trade Secrets confer an actual or potential
5 business advantage over others who do not know the Trade Secrets and who
6 could obtain economic value from their disclosure or use.

7 5. Whether and to what extent the Trade Secrets are, or would be valuable to
8 Space Data's competitors.

8 ***

9 8. Whether Space Data's alleged Trade Secrets derive independent economic
10 value, actual or potential, from not being generally known to the public or to
11 other persons who could obtain economic value from their disclosure or use.

11 Hosie Dec., Ex. 11 (Joint Pretrial Statement) at 28-29.

12 Loon's projections impeach this Google position directly. When owned by Space
13 Data, the trade secrets had no value. When owned by Loon, they had great value. This is
14 classic impeachment which should not be kept from the jury.

15 Similarly, Defendants argues that Space Data did not exercise reasonable efforts,
16 because it did not recover every landed payload. *Compare* Hosie Dec., Ex. 11 (Joint Pretrial
17 Statement) at 6:22-23 ("Defendants contend that Space Data has not taken reasonable efforts
18 under the circumstances to maintain the secrecy of its alleged trade secrets. ECF 465
19 [Answer] at 71") *with* Hosie Dec., Ex. 10 (Answer) at 71 ("Space Data has not taken
20 reasonable efforts ... [t]he platform is freely available for inspection by any member of the
21 public who encounters it once it has landed"). But Defendants **do not retrieve every Loon**
22 **payload either**. *See* Hosie Dec., Ex. 29 (Teller Dep.), 7:15-8:5 & 10:14-21. As Defendants
23 have unlimited resources, Loon's **failure to retrieve every payload** seems good evidence that
24 Space Data's efforts, as a smaller company, are reasonable.

25 Dated: June 25, 2019

Respectfully submitted,

26 /s/ Spencer Hosie

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EXHIBIT 31

**REFILED VERSION OF
ECF NO. 582-6**

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

---oOo---

SPACE DATA CORPORATION,)
)
Plaintiff,)
)
vs.)
) Case No.
ALPHABET, INC., and GOOGLE,) 5:16-cv-03260-BLF
9 LLC,) (NC)
)
10 Defendants.)
)
11 _____)

CONFIDENTIAL - ATTORNEYS' EYES ONLY

VIDEOTAPED DEPOSITION OF ASTRO TELLER

June 13, 2018

JUVILYNN T. ARBUTHNOT, CSR No. 13817.
439158



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(518) 490-1910 Albany
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(800) 222-1231 Carlsbad
(800) 222-1231 Monterey
(516) 277-9494 Garden City
(914) 510-9110 White Plains
001+1+800 222 1231 Hong Kong

1 A Yes.

2 Q All right, sir. And you've been involved in the
3 Loon project from its earliest days in 2011, have you
4 not?

12:05 5 A Yes.

6 Q And over the years, since Google has launched
7 literally thousands of Loon balloons across various
8 locations?

9 A I'm not absolutely certain it's above a
12:05 10 thousand.

11 Q It's above a thousand.

12 And Google has tried hard to retrieve all of
13 those balloons and payloads over the years; correct?

14 A Yes.

12:05 15 Q But some have not been retrieved; correct?

16 A That's true.

17 Q All right. And so there are some Loon balloons
18 and payloads sitting out there in places Google doesn't
19 know?

12:05 20 A I suppose that's true.

21 Q Is it your personal view, sir, that given that
22 there are Loon balloons out there sitting in some
23 farmer's back forty -- does that mean that Google has
24 forfeited all of its technological trade secrets?

12:05 25 MR. WERDEGAR: Objection. Vague. Overbroad.

1 Calls for a legal conclusion. Calls for speculation.

2 BY MR. HOSIE:

3 Q Your personal view, sir.

4 A That's certainly not our intention, but I'm not

12:06 5 a lawyer, so I couldn't tell you.

6 Q So the answer is, "I don't know"?

7 A Yes.

8 Q Is it your personal view that the fact that you

9 haven't reclaimed 100 percent of the Loon payloads means

12:06 10 that all of your technology is now in the public domain?

11 MR. WERDEGAR: Objection. Asked and answered.

12 And same other objections.

13 THE WITNESS: I'm not sure what it means to say

14 "in the public domain." I understand you mean that in

12:06 15 the nonliteral sense, but of course in the literal sense

16 it is in the public domain, so I'm not sure how to answer

17 your question.

18 BY MR. HOSIE:

19 Q Yes. I mean, if there's a Loon balloon sitting

12:06 20 out there in some location in Kenya or Nevada.

21 A It's in the public.

22 Q Indeed. And because the balloon is in the

23 public, would you think that Google has forfeited all of

24 its technological secrets?

12:06 25 MR. WERDEGAR: Objection. Incomplete

1 you. I'm not sure a different way to give you what you
2 want.

3 BY MR. HOSIE:

4 Q Well, that's the beauty of cross-examination,
12:07 5 sir. It's called the great engine of truth,
6 historically.

7 Do you recall the question I asked you?

8 A Try again. I'm really trying to get you --

9 Q Sure.

12:08 10 A -- what you want. Can you ask the question
11 again? Maybe I can --

12 Q I'd be happy to.

13 A -- see a different perspective on it.

14 Q Mr. Teller, is it your personal view that Google
12:08 15 has lost all of its trade secrets because it has failed
16 to retrieve 100 percent of its Loon payloads?

17 MR. WERDEGAR: Objection. Incomplete
18 hypothetical. Asked and answered. Calls for a legal
19 conclusion.

12:08 20 THE WITNESS: I'm not a lawyer, but certainly
21 that's not the intention of the engineers at Loon.

22 BY MR. HOSIE:

23 Q It sure wouldn't strike you as fair, were that
24 true, would it?

12:08 25 MR. WERDEGAR: Same objections.

1 DEPOSITION OFFICER'S CERTIFICATE

2 STATE OF CALIFORNIA)
) ss.
 3 COUNTY OF MARIN)

4
 5
 6 I, JUVILYNN T. ARBUTHNOT, hereby certify:

7 I am a duly qualified Certified Shorthand
 8 Reporter in the State of California, holder of
 9 Certificate Number 13817 issued by the Court Reporters
 10 Board of California and which is in full force and
 11 effect. (Fed. R. Civ. P. 28(a)).

12 I am authorized to administer oaths or
 13 affirmations pursuant to California Code of Civil
 14 Procedure, Section 2093(b) and prior to being examined,
 15 the witness was first duly sworn by me. (Fed. R. Civ. P.
 16 28(a), 30(f)(1)).

17 I am not a relative or employee or attorney or
 18 counsel of any of the parties, nor am I a relative or
 19 employee of such attorney or counsel, nor am I
 20 financially interested in this action. (Fed. R. Civ. P.
 21 28).

22 I am the deposition officer that
 23 stenographically recorded the testimony in the foregoing
 24 deposition and the foregoing transcript is a true record
 25 of the testimony given by the witness. (Fed. R. Civ. P.

1 30(f)(1)).

2 Before the completion of the deposition, review
3 of the transcript [XX] was [] was not requested. If
4 requested, any changes made by the deponent (and provided
5 to the reporter) during the period allowed, are appended
6 hereto. (Fed. R. Civ. P. 30(e)).

7 Dated: June 29, 2018.

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11 _____
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SPACE DATA CORPORATION

EXHIBIT 34

**REFILED VERSION OF
ECF NO. 582-10**

From: Sebastian Thrun <thrun@google.com>
To: Richard DeVaul <devaul@google.com>
Sent: Thu, 4 Aug 2011 21:57:20 -0700
Subject: Fwd: WSJ article on Space Data
Cc: Astro Teller <astroteller@google.com>

please don't forward

----- Forwarded message -----
From: **Sergey Brin** <sergey@google.com>
Date: Thu, Aug 4, 2011 at 9:11 PM
Subject: Fwd: WSJ article on Space Data
To: Sebastian Thrun <thrun@google.com>

yes it was space data.
see below the wsj article that came out about it.

--sergey

----- Forwarded message -----
From: **Mike Pearson** <pearson@google.com>
Date: Tue, Feb 19, 2008 at 10:37 PM
Subject: Fwd: WSJ article on Space Data
To: Larry Page <page@google.com>, Sergey Brin <sergey@google.com>, Larry Alder <ldalder@google.com>, Minnie Ingersoll <minnie@google.com>, Daniel Conrad <dconrad@google.com>, Dave Sobota <dsobota@google.com>, Joe Faber <jfaber@google.com>, marias@google.com, Jon Murchinson <jonm@google.com>, Phil Gossett <philipg@google.com>

All

Here is the full article from Space Data that is to be published in the WSJ tomorrow. Jerry and Eric maintain that they did not identify Google by name but that given our recent press on spectrum the WSJ chose to focus on us as the most likely suspect. Can we use part of the Thursday spectrum meeting to get feedback from the visit last week and then decide how to move forward?

Thanks

Mike

Floating a New Idea

For Going Wireless, Parachute Included

Balloon Launch Gets
Google's Attention;
Dairy Farmers Can Help
By AMOL SHARMA
February 20, 2008; Page A1

CHANDLER, Ariz. -- Jerry Knoblach wants to bring wireless service to millions of rural Americans. His plan: Beam it down from balloons hovering at the edge of space.

This isn't just hot air. His company, Space Data Corp., already launches 10 balloons a day across the Southern U.S., providing specialized telecom services to truckers and oil companies. His balloons soar 20 miles into the stratosphere, each carrying a shoebox-size payload of electronics that acts like a mini cellphone "tower" covering thousands of square miles below.

Cheap, disposable hydrogen-filled balloons carrying miniature versions of cellphone towers may soon provide service to rural, sparsely populated areas. WSJ's Amol Sharma visits Space Data, a company that makes the specialized balloons.

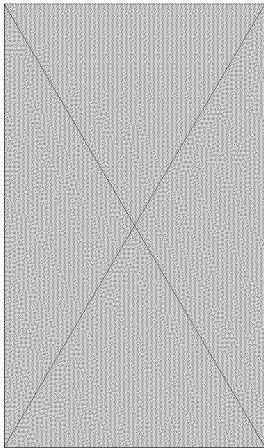
His idea has caught the eye of Google Inc., according to people familiar with the matter. The Internet giant -- which is now pushing into wireless services -- has considered contracting with Space Data or even buying the firm, according to one person.

Mr. Knoblach, Space Data's chief executive, declined to comment on specific partners. Google declined to comment.

Expanding rural telecom services is a priority for regulators. About 36% of rural Americans don't have Internet connections. The problem is that it's expensive to string cable or build cellphone towers in areas with so few customers. Space Data says a single balloon can serve an area otherwise requiring 40 cell towers.

Maintaining a telecom system based on gas-filled bladders floating in the sky requires some creativity. The inexpensive balloons are good for only 24 hours or so before ultimately bursting in the thin air of the upper atmosphere. The electronic gear they carry, encased in a small Styrofoam box, then drifts gently back to earth on tiny parachutes.

This means Space Data must constantly send up new balloons. To do that, it hires mechanics employed at small airports across the South. It also hires farmers -- particularly, dairy farmers.



They're "very reliable people," says Mr. Knoblach. They have to "milk the cows 24-7, 365 days a year, so they're great people to use as a launch crew." Space Data pays them \$50 per launch.

Extra Pocket Money

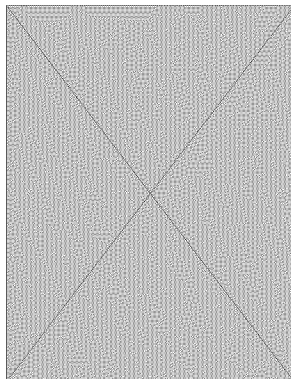
Sharon Hodges, a 60-year-old cattle-and-wheat farmer in Piedmont, Okla., and part-time balloon launcher, says she doesn't know much about technology but liked the extra pocket money.

Every day just before sunset, she unfolds a deflated balloon, attaches it to a hydrogen tank and inflates it to about 6 feet in diameter. Then she hitches the electronic payload to the balloon, walks it through the 16-foot-tall double doors of her barn, and lets go of it.

The balloons rise about 1,000 feet a minute and reach their target altitude of 65,000 to 100,000 feet in under two hours.

Not the Hindenburg

Most of Space Data's balloons are filled with hydrogen, because it is cheaper than the helium used in toy balloons and modern blimps. Hydrogen is, of course, flammable, but Mr. Knoblach says there's no safety issue because each balloon contains so little gas. "It's not like the Hindenburg," he says.



A balloon being

launched in Piedmont,
Oklahoma.

Mr. Knoblach also dismisses another potential hazard: Airplanes crashing into balloons. He points out that Space Data's balloons are similar in design to weather balloons, about 1,800 of which are launched world-wide every day without problems.

According to a Federal Aviation Administration official, there are no records of passenger jets colliding with balloons in the U.S. The engines of a commercial jet are designed to withstand the ingestion of an eight-pound bird, the FAA says. (The payload on a Space Data balloon weighs six pounds.)

Google believes balloons like these could radically change the economics of offering cellphone and Internet services in out-of-the-way areas, according to people familiar with its thinking. The company is among the registered bidders for a big chunk of radio spectrum at a government auction currently under way in Washington.

At Space Data's command center in Chandler, engineers track their 10 balloons on a wall-mounted electronic map. Balloons move slowly across Texas, New Mexico, Oklahoma and Arizona, where Space Data sells wireless services used by truckers to track their fleet. Overlapping rings on the map demarcate the coverage area of each balloon's transceiver.

When a balloon approaches the end of its useful life, technicians send a signal to separate it from its electronic payload, which parachutes to earth. The balloons eventually burst into "confetti" from the low air pressure, Mr. Knoblach says.

The environmental ramifications of the resulting shower of latex balloon scraps are complex. Some environmentalists argue balloons can be fatal to turtles, fish and whales, which mistake floating latex for jellyfish or other edible sea life. Several states, including Florida and Virginia, restrict balloon launches.

Dale Florio, a spokesman for the Balloon Council, a trade group for balloon makers, says latex balloons biodegrade "at the rate of an oak leaf that falls from a tree."

Net Benefit

Mr. Knoblach says his operation was reviewed by more than a dozen federal agencies, which found no significant environmental impact. Some agencies even consider it a net benefit, he says: The balloons replace tall cellphone towers, which are blamed for killing a significant number of migratory birds that crash into them.

While the balloons are cheap and disposable at \$50 a pop, the transceivers they carry are worth about \$1,500. Once a transceiver is released from its balloon to parachute back to earth, there's no way to predict where it will land. So Space Data has hired 20 hobbyists with GPS devices to track them down.

Recovery missions can get intense. Workers have had to pluck transceivers out of trees in Louisiana, rappel down rocky cliffs in Arizona, trudge through swamps and kayak across ponds.

Space Data pays them \$100 per transceiver recovered.

"These things can fall anywhere," says Chip Kyner of San Antonio, who once hiked seven miles before finding the transmitter he was looking for. The final mile was in pitch darkness.

"It wasn't worth the \$100," he says, "but it's a neat story."

----- Forwarded message -----

From: **Jim Wiesenberg** <jim.wiesenberg@spacedata.net>

Date: Feb 19, 2008 8:45 PM

Subject: WSJ article on Space Data

To: Minnie Ingersoll <minnie@google.com>, Mike Pearson <pearson@google.com>

Cc: Jerry Knoblach <knoblach@spacedata.net>, Eric Frische <efrische@spacedata.net>

http://online.wsj.com/article/SB120347353988378955.html?mod=hps_us_inside_today

Above is link to article that will be in Wednesday's paper but is online now as well as video. I mentioned to Sergey that it was coming just before you all left. We intend to continue to advise all queries that we receive that we contacted numerous parties that were likely bidders and have a NDA in place with several. We thought you would appreciate seeing the attached still tonight and look forward to continuing our discussions soon.

Regards,

Jim Wiesenberg

Chief Strategy Officer

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--

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EXHIBIT 37

REFILED ECF NO. 582-14

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16 UNITED STATES DISTRICT COURT
17 NORTHERN DISTRICT OF CALIFORNIA
18 SAN JOSE DIVISION

19 SPACE DATA CORPORATION,
20
21 Plaintiff,
22 v.
23 ALPHABET INC. and GOOGLE LLC,
24 Defendants.
25

Case No. 5:16-cv-03260-BLF

**DEFENDANTS' SUPPLEMENTAL
RESPONSE TO PLAINTIFF'S SECOND
SET OF INTERROGATORIES (NO. 10)**

Judge: Hon. Beth Labson Freeman

Date Filed: June 13, 2016

Trial Date: August 5, 2019

27 **CONTAINS INFORMATION DESIGNATED HIGHLY CONFIDENTIAL –**
28 **ATTORNEY'S EYES ONLY BY GOOGLE**

Pursuant to Federal Rules of Civil Procedure 26 and 33, Defendants Alphabet Inc. and Google LLC (collectively, "Google") hereby provides the following supplemental responses to Plaintiff Space Data Corporation's ("Space Data's") Second Set of Interrogatories.

I. PRELIMINARY STATEMENT AND GENERAL OBJECTIONS

1. Google incorporates its General Objections, including its objections to Space Data's definitions, as provided in its initial responses to Space Data's Second Set of Interrogatories, as well as its specific objections each interrogatory. Any objections made in this supplemental response are made in addition to Google's earlier stated objections, and the absence of an earlier objection in this supplemental response does not constitute a waiver of any prior objection.

2. Google's responses are based upon information and documentation that is currently available and specifically known to Google following a reasonable and ongoing investigation, and are given without prejudice to Google's right to produce or rely on subsequently discovered, uncovered, or learned information. It is anticipated that further discovery, independent investigation, and analysis may lead to the discovery of additional documents, supply additional facts, and add meaning to known facts, as well as establish entirely new factual conclusions and legal contentions, all of which may lead to additions and changes to the responses set forth herein. The responses herein reflect Google's good-faith effort to provide responsive information now known to Google, but Google specifically reserves the right both to supplement and amend any of the responses set forth below and to utilize at trial any further information revealed by further discovery, independent investigation, and analysis.

II. SPECIFIC OBJECTIONS AND RESPONSES

INTERROGATORY NO. 10:

Describe in detail the circumstances under which Defendants first started working on the Accused Instrumentalities, including a description of the impetus for Defendants' start of work and when Defendants started to work on the Accused Instrumentalities.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 10.

Subject to and without waiver of the Preliminary Statement and General Objections set

1 forth above, and the General Objections and specific objections to this Interrogatory set forth in
 2 Google's prior responses thereto, all of which are incorporated by reference herein, Google
 3 responds as follows:

4 The idea of using high-altitude lighter-than-air platforms, including balloons, as
 5 communications relays is an old one, dating back to at least the 1960s. By the late 1990s and
 6 early 2000s, the idea was widespread and there already existed a large body of literature
 7 examining the utility of balloons for communications purposes. *See, e.g.*, Defendants' Invalidity
 8 Contentions and Supplements Thereto; Defendants' Responses to Interrogatory Nos. 7 and 19.

9 Years before Space Data first contacted Google, individuals at Google, including its co-
 10 founders, Larry Page and Sergey Brin, were aware of and interested in using high-altitude lighter-
 11 than-air platforms for communications purposes. *See, e.g.*, Page Depo. Rough Tr. at 31; *see also*
 12 Teller Depo. Tr. at 20:22-24 ("Larry Page has been interested in balloons for—since he was in
 13 college."); GOOG-SD-00166555-70 at -66 ("Bringing affordable, balloon-powered Internet
 14 access to remote areas is an idea that Sergey and I have been thinking about for over a decade.").
 15 To that end, and to further Google's goal of expanding Internet access globally, Google
 16 sponsored various initiatives to investigate using high-altitude lighter-than-air platforms. These
 17 included, in 2005 and 2010, Google making financial contributions to support work done by Prof.
 18 Thomas H. Zurbuchen at the University of Michigan. *See* GOOG-SD-00288436-37; GOOG-SD-
 19 00292405-15 (Project Strato). By 2010, Prof. Zurbuchen and his students were experimenting
 20 with using high-altitude balloons to extend the availability of the internet to rural areas and
 21 disaster zones. *See* [https://www.michigandaily.com/news/university-ballooning-teams-seek-
 22 provide-internet-access-more-remote-areas](https://www.michigandaily.com/news/university-ballooning-teams-seek-provide-internet-access-more-remote-areas).

23 [REDACTED]
 24 [REDACTED]
 25 [REDACTED]
 26 [REDACTED]
 27 [REDACTED]
 28 [REDACTED]

1 Thereafter, in late 2009, the general idea of deploying balloons to create a “High-altitude

2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 2011. *See, e.g.*, GOOG-SD-00288347.

9 [REDACTED]
10 [REDACTED]
11 [REDACTED]
12 [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 The concept of what is now Project Loon, which formally started in the summer of 2011,
16 came from Richard DeVaul. According to Dr. DeVaul, his interest in using balloons for
17 communications purposes originated with research that he did while a graduate student at the
18 Massachusetts Institute of Technology. He discussed a similar concept with his advisor at MIT,
19 Dr. Alex “Sandy” Pentland. At that time, MIT’s Media Lab was involved with a project in Costa
20 Rica called “Little Intelligent Communities” (“LINCOS”). LINCOS was focused on bringing
21 communication technology to isolated populations. One such effort involved dropping shipping
22 containers with satellite uplink capability into rural parts of Costa Rica. The media lab also had a
23 parallel project called “Rooftops,” which aimed to create an ad-hoc network of routers atop
24 buildings in Boston. In the context of these two projects, Dr. DeVaul proposed the idea of
25 dangling WiFi routers from balloons—specifically, weather balloons with a long tether.

26 Dr. DeVaul traces Loon’s origins at Google back to a different project he had started
27 shortly after his arrival from Apple in 2011. That project, called “zero-phone,” proposed a low-
28 cost smartphone for the developing world that would have a solar panel for charging and could be

1 shared between and among people in rural areas. Dr. DeVaul recalls pitching the idea to Google
2 X's Astro Teller and Sebastian Thrun, but they noted that connectivity problems in rural areas
3 were the real bottleneck. That is, without connectivity, cheap smartphones would not increase
4 connectivity. *See, e.g.,* DeVaul Depo. Tr. at 22–23. Dr. DeVaul recalls that as a result of Dr.
5 Teller's and Dr. Thrun's feedback he started to focus on ways to solve the connectivity problems.

6 Astro Teller's recalls that soon after Dr. DeVaul started work at Google in June 2011, he
7 and Dr. DeVaul discussed a number of technology ideas for potential exploration by Google's
8 X's new "rapid evaluation" group, of which Dr. DeVaul was a part. According to Dr. Teller,
9 when the idea of using balloons for internet access came up in their discussions, Dr. DeVaul told
10 Dr. Teller that he had been thinking about using balloons for communications for more than a
11 decade and that he was interested in evaluating its viability. *Id.; see also, e.g.,* DeVaul Depo. Tr.
12 at 42–44.

13 Dr. DeVaul commenced his work on investigating using balloons for communications by
14 assessing the various available technological alternatives. He realized that almost every place
15 where terrestrial connectivity solutions were cost effective already had cell towers or other
16 ground-based infrastructure, so he turned to alternative, non-terrestrial methods of data
17 provisioning. As part of that research, he considered stratospheric airships and also looked at
18 fixed-wing aircraft, but rejected the latter due to the limitations on existing battery technology.
19 Similarly, Dr. DeVaul concluded that satellites were not the best technological solution, because
20 they are not cost effective, they required significant lead time for updates, and they require special
21 user devices (*i.e.*, not standard cell phone handsets).

22 Dr. DeVaul finally settled on the idea of free balloons—in particular, long-duration
23 balloons—which he had first considered in graduate school as having the most potential. In July
24 2011, Dr. DeVaul emailed a meeting invitation for July 13, 2011 to the X rapid evaluation team
25 for purposes of "[b]rainstorming around WiFi/WiMax delivery to remote, hostile, or otherwise
26 unconnected regions using station-keeping balloons as low-earth-orbit comms satellites." *See*
27 GOOG-SD-00288348. Three weeks later, on August 3, 2011, Dr. DeVaul emailed the X rapid
28 evaluation team to report on his initial investigation results, writing: "It appears that it may be

1 technically feasible to provide internet access and GSM phone service using relatively
 2 inexpensive stratosphere balloons as alternatives to LEO satellites or conventional cell
 3 infrastructure.” GOOG-SD-00288349.

4 Later in August 2011, Dr. DeVaul and the other founding members of Project Loon,
 5 including Cliff Biffle and Josh Weaver, leveraged the knowhow and equipment, including a latex
 6 sounding balloon, from the “Android in Near Space” team at Google to test the first balloon
 7 prototype for Project Daedalus. *See, e.g.*, Biffle Depo. Rough Tr. at 34–35; GOOG-SD-
 8 00292321; GOOG-SD-00084132. The first test launch occurred on August 25, 2011 at Dinosaur
 9 Point State Park, near Hollister, California, which was documented—along with other early test
 10 flights and simulations, including those performed by other early members of the Project
 11 Daedalus team—in the internal Project Daedalus blog. *See* GOOG-SD-00067397; *see also, e.g.*,
 12 GOOG-SD-00063464 to -477, Biffle Depo. Rough Tr. at 32–33; Piponi Depo. at 11, 22–25;
 13 DeVaul Depo. at 53–61.

14
 15 Dated: July 6, 2018

KEKER, VAN NEST & PETERS LLP

17 By: /s/ Matthew M. Werdegar

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28
 Attorneys for Defendants
 ALPHABET INC. and GOOGLE LLC

PROOF OF SERVICE

I am employed in the City and County of San Francisco, State of California in the office of a member of the bar of this court at whose direction the following service was made. I am over the age of eighteen years and not a party to the within action. My business address is Kecker, Van Nest & Peters LLP, 633 Battery Street, San Francisco, CA 94111-1809.

On July 6, 2018, I served the following document(s):

DEFENDANTS' SUPPLEMENTAL RESPONSE TO PLAINTIFF'S SECOND SET OF INTERROGATORIES (NO. 10)

☒ by **E-MAIL VIA PDF FILE**, by transmitting on this date via e-mail a true and correct copy scanned into an electronic file in Adobe "pdf" format. The transmission was reported as complete and without error.

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Executed on July 6, 2018, at San Francisco, California.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct.



Maureen L. Stone

EXHIBIT 38

REFILED ECF NO. 582-16

**HIGHLY CONFIDENTIAL
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10 *Attorneys for Plaintiff*
11 *SPACE DATA CORPORATION*

12
13 UNITED STATES DISTRICT COURT
14 FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

15 SPACE DATA CORPORATION,
16
17 Plaintiff,
18 v.
19 ALPHABET INC., and GOOGLE LLC,
20 Defendants.
21

Case No. 5:16-cv-03260-BLF (NC)

**PLAINTIFF SPACE DATA
CORPORATION'S JULY 3, 2018
AMENDED RESPONSES TO
DEFENDANT GOOGLE LLC'S
INTERROGATORY NOS. 14 AND 21**

Judge: Hon. Beth Labson Freeman
Date Filed: June 13, 2016
Trial Date: August 5, 2019

22 **HIGHLY CONFIDENTIAL: ATTORNEYS' EYES ONLY**
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1 Space Data Corporation (“Space Data” or “Plaintiff”), hereby provides its amended
 2 responses (inclusive of objections) to Google LLC’s (“Google” or “Defendant”)
 3 Interrogatory Nos. 14 and 21 (the “Interrogatories”).¹

4 Discovery is ongoing, and Space Data has not yet completed discovery in this action,
 5 and has not completed preparation for trial. All of the following responses to Defendant’s
 6 discovery therefore are without prejudice to Space Data’s right to produce evidence of any
 7 subsequently discovered facts or subsequently discovered documents. The information
 8 hereinafter set forth is true and correct to the best of Space Data’s knowledge as of this date,
 9 and is subject to correction for inadvertent errors, mistakes or omissions.

10 **GENERAL OBJECTIONS**

11 1. All Space Data’s General Objections, and all Space Data’s Specific
 12 Objections to the Interrogatories, made in Space Data’s prior responses that relate to the
 13 Interrogatories are incorporated herein by reference.

14 2. Space Data objects to the Interrogatories as premature, as fact discovery has
 15 not been completed and many of Google’s corporate witnesses have not yet testified.

16 3. Space Data objects to the Interrogatories to the extent they are inconsistent
 17 with or purport to impose upon Space Data obligations exceeding those set forth in the
 18 Federal Rules of Civil Procedure and the Local Rules of the United States District Court for
 19 the Northern District of California, any discovery plan that may be agreed to by the parties
 20 and approved by the Court, any other schedule or ruling that may be set forth by the Court, or
 21 any other agreement of the parties.

22 4. Space Data objects to each of the requests to the extent they seek description
 23 or identification of all or each fact, act, document, persons, communications, or other
 24 evidence or member of a category of information or thing concerning any subject matter.
 25 This language renders these requests vague, ambiguous, unintelligible, unduly broad, and

26 _____
 27 ¹ Google and Alphabet Inc. are collectively referred to as “Defendants.”
 28

1 uncertain. To the extent Space Data agrees to identify any information, it will conduct a
2 reasonable investigation for relevant, responsive, non-duplicative, non-privileged information
3 and make reasonable identifications based on its investigation, as, we are sure, will Google.

4 5. Space Data objects to the Interrogatories to the extent they are vague,
5 ambiguous, overly broad and unduly burdensome, and not reasonably calculated to lead to
6 the discovery of admissible evidence. Space Data expressly reserves all objections as to
7 vagueness, ambiguity, unintelligibility, and overbreadth.

8 6. Nothing herein shall be construed as an admission by Space Data regarding
9 the admissibility or relevance of any fact or document or of the truth or accuracy of any
10 characterization contained in Google's discovery requests. Space Data expressly reserves all
11 objections regarding the competency, relevancy, materiality, probative value, and
12 admissibility of all information provided, documents produced and contents thereof.

13 7. Space Data objects to the Interrogatories to the extent that they are duplicative
14 of other discovery to be produced in this case or seek documents and things which are more
15 easily available through other, less burdensome means.

16 8. Space Data objects to the Interrogatories to the extent that they seek
17 information, documents, or things that are not relevant to the subject matter of this action or
18 to a claim or defense of any party and/or are not reasonably calculated to lead to the
19 discovery of admissible evidence.

20 9. Space Data objects to each request to the extent it includes subparts that
21 should be propounded, numbered, or counted as separate interrogatories in accordance with
22 Federal Rules of Civil Procedure 33.

23 10. Space Data objects to the Interrogatories to the extent they seek information
24 that does not exist or that is otherwise outside of Space Data's possession, custody, or
25 control.

26 11. Space Data objects to the Interrogatories to the extent they seek information
27 that is already within the possession of Defendants or that is readily accessible to Defendants,
28

1 as through public sources.

2 12. Space Data objects to the Interrogatories, and each of the requests,
3 instructions and definitions therein or incorporated therein, insofar as the Interrogatories and
4 any request, instruction or definition seeks information or production of documents or things
5 protected by the attorney-client privilege, protected by the work-product doctrine, immune as
6 trial-preparation material, or protected by any other applicable privilege, immunity, rule or
7 duty of confidentiality which precludes or limits the disclosures of such information. Such
8 information shall not be provided in response to the Interrogatories and any inadvertent
9 disclosures shall not be deemed a waiver of any privilege or related doctrine.

10 13. Space Data objects to the Interrogatories to the extent they seek information,
11 documents or things that contain trade secret, confidential or proprietary information. Space
12 Data will provide such information, documents or things only subject to the protection of the
13 Stipulated Protective Order in this case (ECF 171).

14 14. Space Data objects to the Interrogatories to the extent they require Space Data
15 to provide information or documents or things that are subject to a non-disclosure or
16 confidentiality agreement or protective order with a third party, or a legal or regulatory or
17 other government restriction, or that contain the trade secrets of or confidential or proprietary
18 or sensitive information of a third party. To the extent Space Data identifies any such
19 information, document or thing, it will abide by its confidentiality obligation that prevents
20 disclosure and provide notice to Defendant of the nature of the information, document or
21 thing and the confidentiality obligation that prevents disclosure. To the extent that Space
22 Data is able to provide any such information, documents or things, it will only do so subject
23 to the protection of the Stipulated Protective Order in this case (ECF 171).

24 15. Space Data objects to the Interrogatories to the extent they seek sensitive
25 personal or private information that is otherwise confidential or protected by a person's right
26 to privacy. If Space Data provides any such information, documents or things, it will do so
27 subject to the protection of the Stipulated Protective Order in this case (ECF 171).

1 16. Space Data objects to the Interrogatories as premature to the extent they seek
2 information that is the subject of expert discovery.

3 17. Space Data objects to the Interrogatories as premature, given Space Data has
4 not completed its investigation of facts, witnesses or documents relating to this case, has not
5 completed analysis of available information, and has not completed preparation for trial.
6 Trial is not set in this matter until August 5, 2019. Opening expert reports are not due until
7 September 7, 2018.

8 18. Space Data objects to the Interrogatories to the extent they seek electronically
9 stored information (“ESI”) in in a format not maintained by Space Data, ESI from sources
10 that are not reasonably accessible because of undue burden or expense, or ESI in a format
11 that is unduly burdensome and not reasonably proportionate to the needs of the case where
12 other formats have been produced or are available. Space Data objects to the Interrogatories
13 to the extent they are inconsistent with or purport to impose upon Space Data obligations
14 exceeding those set forth by the Stipulated Order Re: Discovery of Electronically Stored
15 Information, the Stipulated Order Re: Discovery of Emails, or any other agreements as to ESI
16 reached by the parties or ordered by the Court.

17 19. Space Data objects to Definition No. 1 as vague, ambiguous, overly broad and
18 unduly burdensome, and not reasonably calculated to lead to the discovery of admissible
19 evidence to the extent it purports to include within the scope of “Space Data,” “you” “your”
20 or “Plaintiff” entities that are not Plaintiff. Space Data will construe “Space Data,” “you”
21 “your” and “Plaintiff” to mean Plaintiff Space Data Corporation.

22 20. Space Data objects to Definition Nos. 6 and 8 to the extent they purport to
23 impose upon Space Data obligations exceeding those set forth in the Federal Rules of Civil
24 Procedure and the Local Rules of the United States District Court for the Northern District of
25 California, any discovery plan agreed or that may be agreed to by the parties and approved
26 by the Court, any other schedule or ruling that may be set forth by the Court, or any other
27 agreement of the parties. Space Data will respond in accordance with these rules /
28

1 agreements. Space Data further objects to these definitions to the extent they seek
2 information protected by the attorney-client privilege, the work-product doctrine, or any
3 other applicable privilege, protection or immunity, including FRE 408 and FRCP 26(b), or
4 information subject to a non-disclosure or confidentiality agreement or protective order with
5 a third party, or information subject to a legal, regulatory or government restriction, or
6 information that contains the trade secrets of or confidential or proprietary information of a
7 third party.

8 21. Space Data objects to Definition No. 7 as vague and ambiguous to the extent
9 that the parties may have different interpretations of the term “Confidential Information” as
10 used in the parties’ NDA.

11 22. Space Data objects to Definition Nos. 9 and 10 to the extent they purport to
12 impose upon Space Data obligations exceeding those set forth in the Federal Rules of Civil
13 Procedure and the Local Rules of the United States District Court for the Northern District of
14 California, any discovery plan agreed or that may be agreed to by the parties and approved
15 by the Court, any other schedule or ruling that may be set forth by the Court, or any other
16 agreement of the parties. Space Data will respond in accordance with these rules /
17 agreements. Space Data further objects to these definitions to the extent they seek
18 information protected by the attorney-client privilege, the work-product doctrine, or any
19 other applicable privilege, protection or immunity, including FRE 408 and FRCP 26(b), or
20 information subject to a non-disclosure or confidentiality agreement or protective order with
21 a third party, or information subject to a legal, regulatory or government restriction, or
22 information that contains the trade secrets of or confidential or proprietary information of a
23 third party, or sensitive personal or private information that is otherwise confidential or
24 protected by a person’s right to privacy. Space Data also objects to these definitions as
25 vague, ambiguous, overly broad and unduly burdensome, and not reasonably calculated to
26 lead to the discovery of admissible evidence.

27 23. Space Data objects to Definition No. 15 as unduly burdensome to the extent it
28

1 seeks to include affiliates, subsidiaries, predecessors-in-interest, successors-in-interest, and
2 present and former officers, directors, managers, employees, consultants, agents, attorneys,
3 accountants, and representatives of Defendants within the definition of “third party.” Space
4 Data will not read the term “third party” to include the Google or Alphabet associated
5 persons described in the immediately preceding sentence.

6 24. Space Data objects to Instruction No. 1 to the extent it purports to impose
7 upon Space Data obligations exceeding those set forth in the Federal Rules of Civil
8 Procedure and the Local Rules of the United States District Court for the Northern District of
9 California, any discovery plan agreed or that may be agreed to by the parties and approved
10 by the Court, any other schedule or ruling that may be set forth by the Court, or any other
11 agreement of the parties. Space Data will not provide an “incomplete response / efforts that
12 were made log.” Space Data further objects to Instruction No. 1 to the extent it seeks
13 information that is outside of Space Data’s possession, custody, or control. Space Data
14 further objects to Instruction No. 1 as vague, ambiguous, overly broad and unduly
15 burdensome, and not reasonably calculated to lead to the discovery of admissible evidence.
16 For example, the term “best knowledge” renders the request vague, ambiguous and unduly
17 burdensome.

18 25. Space Data objects to Instruction No. 2 to the extent it purports to impose
19 upon Space Data obligations exceeding those set forth in the Federal Rules of Civil
20 Procedure and the Local Rules of the United States District Court for the Northern District of
21 California, any discovery plan agreed or that may be agreed to by the parties and approved
22 by the Court, any other schedule or ruling that may be set forth by the Court, or any other
23 agreement of the parties. Space Data also objects to Instruction No. 2 as unduly burdensome
24 to the extent it purports to require that Space Data “state the grounds for any objection with
25 specificity” with regard to post-filing privileged, work product, trial preparation or otherwise
26 immune materials or information.

27 26. Space Data objects to Instruction No. 3 to the extent it purports to impose
28

1 upon Space Data obligations exceeding those set forth in the Federal Rules of Civil
 2 Procedure and the Local Rules of the United States District Court for the Northern District of
 3 California, any discovery plan agreed or that may be agreed to by the parties and approved
 4 by the Court, any other schedule or ruling that may be set forth by the Court, or any other
 5 agreement of the parties. Space Data further objects to Instruction No. 3 as vague and
 6 ambiguous, especially as to the phrase “subject to Google’s right to clarify the meaning in the
 7 same or a different manner.” Space Data does not agree that Google has any rights beyond
 8 those provided by the Federal Rules of Civil Procedure or the Local Rules of the United
 9 States District Court for the Northern District of California.

10 27. The fact that part or all of any request has been answered shall not be
 11 construed to be a waiver of any objections to any request.

12 28. Space Data expressly incorporates each of the foregoing General Objections
 13 into each of the Specific Objections set forth below. No response to an Interrogatory shall be
 14 understood as, nor is intended to be, a waiver of any General Objection or any Specific
 15 Objection that may be separately stated with respect to any response. Nor shall any response
 16 to a request be deemed to constitute any agreement or concession that the subject matter
 17 thereof is relevant to this action.

18 29. All of the responses set forth below are made without waiving or intending to
 19 waive any objection, including but not limited to objections as to competency, relevancy,
 20 materiality, authenticity, privilege, or admissibility. Space Data reserves the right to revise
 21 or supplement its responses to the Interrogatories at any time should additional responsive
 22 information be discovered and/or additional claims be asserted. Space Date also reserves the
 23 right to assert additional objections at any time.

24 **RESPONSES TO INTERROGATORIES**

25 **INTERROGATORY NO. 14:**

26 State all facts and identify all documents that support your contention that Google
 27 has used or disclosed any item of Confidential Information in violation of the NDA,
 28

1 and identify all persons with knowledge of such facts.

2 **AMENDED (07/03/2018) RESPONSE:**

3 Space Data refers to and incorporates by reference each of the foregoing General
 4 Objections. In addition to the foregoing General Objections, Space Data specifically objects
 5 to this interrogatory because amongst other things, the request's reference to "all facts"; "all
 6 documents"; and "all persons" renders it overly broad, unduly burdensome and not
 7 reasonably calculated to lead to the discovery of admissible evidence. Space Data also
 8 objects to this request to the extent it includes subparts that should be propounded, numbered,
 9 or counted as separate interrogatories in accordance with Federal Rules of Civil Procedure
 10 33. Space Data further objects to this interrogatory to the extent it seeks information within
 11 Defendants possession, custody and/or control, and/or information more easily available to
 12 Defendants, as through public sources. Space Data also objects to this request as premature,
 13 given that Space Data has not completed its investigation of facts, witnesses or documents
 14 relating to this case (including the NDA), has not completed discovery, has not completed
 15 analysis of available information, and has not completed preparation for trial. Many of
 16 Google's corporate witnesses have not yet testified and opening expert reports are due until
 17 September 7, 2018. Space Data further objects to this interrogatory to the extent it seeks
 18 information, documents, and/or things protected by the attorney-client privilege, the work-
 19 product doctrine, or any other applicable privilege or immunity.

20 Subject to, and without waiver of, the foregoing General and Specific Objections,
 21 Space Data responds further as follows:

22 After flying tens of thousands of flights, Space Data accumulated valuable,
 23 proprietary wind data that allowed Space Data to come to the conclusion that the optimum
 24 altitude for flying its constellation of balloons was in the approximately [REDACTED]

25 [REDACTED] Space Data further determined that, based on its knowledge of the
 26 structure of the micro-currents in this altitude, it could fly its constellation of balloons
 27 [REDACTED], which is much closer than what had been disclosed in the

1 '941 patent (350 miles apart). This key finding, which is critical to optimizing wireless
2 coverage to LTE devices, was not known to the public in 2008 (as Space Data made this
3 realization from its own proprietary wind data) and Space Data had not disclosed this finding
4 in any of its patent applications or public statements.

5 This information about the [REDACTED] the ability to space balloons more closely
6 together, the method for doing so, and the wind data underlying this conclusion were all
7 disclosed to Google under the NDA and protected by designation under the NDA. Google
8 [REDACTED]
9 apart, precisely for the reasons Space Data identified in 2008 and based on the Confidential
10 Information received from Space Data under the NDA.

11 Space Data also developed proprietary systems for monitoring its balloon
12 constellation, controlling altitude with its hover algorithm, managing thermal heat regulation,
13 and operating its system from the NOC, all of which were disclosed to Google in its visit in
14 February 2008 and designated as confidential under the NDA. With the team of executives
15 and engineers and the aid of the cameras Google brought to its visit, Google was able to
16 capitalize on all of the Confidential Information Space Data disclosed to it during this visit.
17 Google's Project Loon was developed based on this Confidential Information obtained from
18 Space Data during the February 2008 visit and such information proved to Google that a
19 worldwide constellation of balloons providing network connectivity was feasible.

20 In addition to the technical information provided to Google, Space Data shared with
21 Google detailed, proprietary, financial models and historical financial statements, which
22 allowed Google to piece together the cost model and logistical processes involved in
23 developing its own Project Loon. This financial information was provided under the NDA
24 and clearly designated as confidential and proprietary by Space Data. All of this financial
25 information is separate from any idea disclosed in any of Space Data's patents. Google's
26 Project Loon was developed based on the Confidential Information obtained from Space
27
28

1 Data's financial data and modelling that showed a pathway to making a balloon-constellation
2 communication system economically feasible.

3 Space Data provided Google with confidential and proprietary "vision" slides in early
4 2008 which described, for the first time, the concept of a worldwide balloon-based network
5 and gave Google detail on how to use a worldwide network, how to implement such a
6 network and the advantages of such a network. This worldwide concept and the details on
7 how to implement are not contained in any of Space Data's patents and were disclosed to
8 Google only under the NDA for purposes of evaluating Space Data as an acquisition target.
9 Space Data protected these "vision" slides as confidential under the NDA.

10 The NDA prohibited Google from using any of Space Data's Confidential
11 Information for any purpose other than to "enable the parties to evaluate the feasibility of a
12 business relationship or" "a proposed acquisition of shares or assets of" Space Data.
13 Google's use of the above-identified Space Data Confidential Information for its
14 development and execution of Project Loon is a clear violation of the allowed use under the
15 NDA.

16 Google has used and continues to use Space Data's Confidential Information in
17 violation of the NDA, despite the NDA's "residuals" clause. The residuals clause exempts
18 from the NDA information "[r]etained in the unaided memories of Google employees" and,
19 importantly, states that "[a] person's memory is unaided if such person **has not intentionally**
20 **memorized** the Confidential Information for the purpose of retaining and subsequently using
21 or disclosing it."

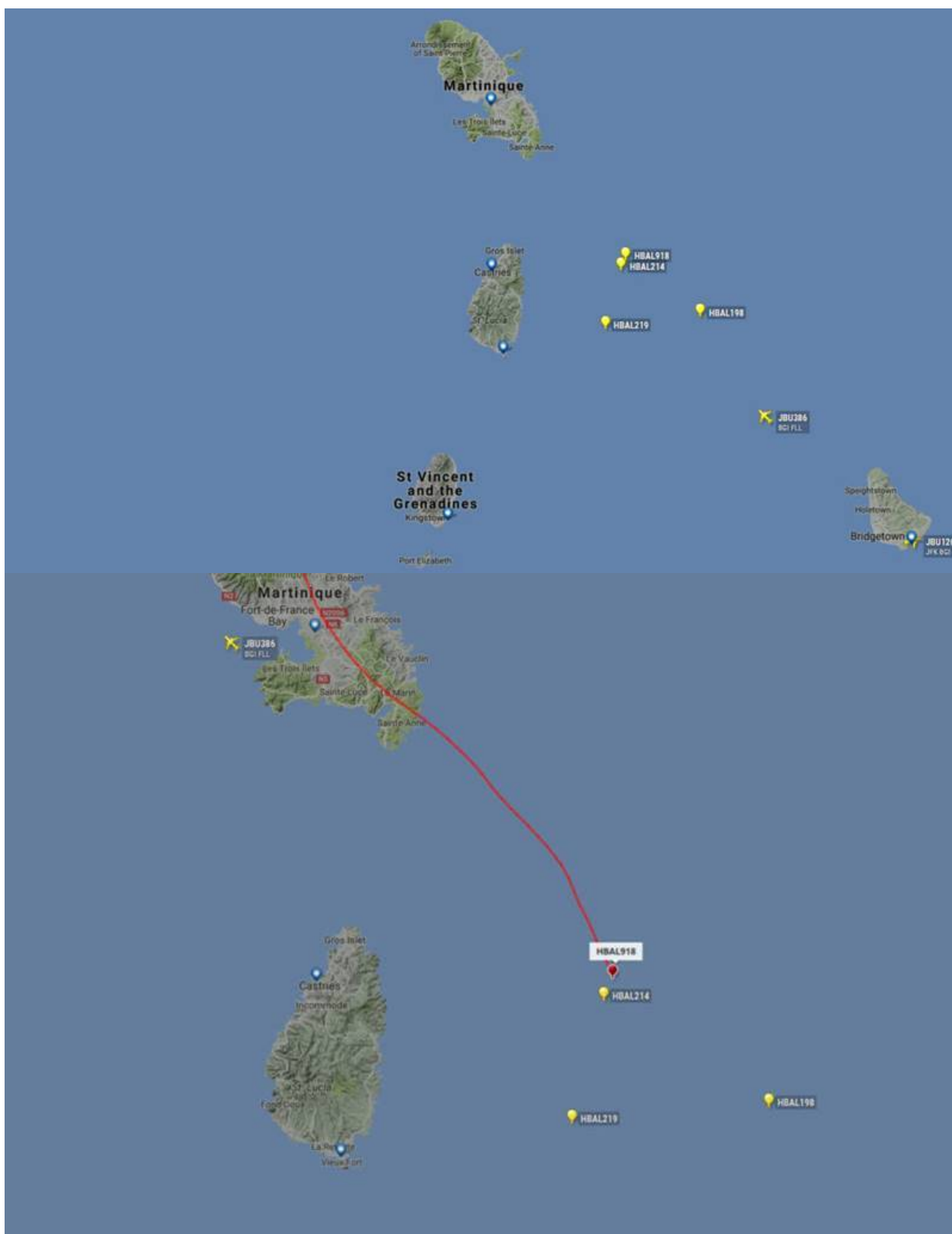
22 Google is using the Confidential Information disclosed by Space Data under the NDA
23 for its own use in Project Loon in a manner and to a degree that it could not come from
24 unintentional recollection from unaided memory. Google's team of visitors took extensive
25 photographs of Space Data's facilities, payloads, balloons, NOC center, and its real-time
26 flight data reflected on the screens within the NOC. Space Data also discussed, at length,
27 with Google, details regarding its technical trade secrets. Space Data designated all such
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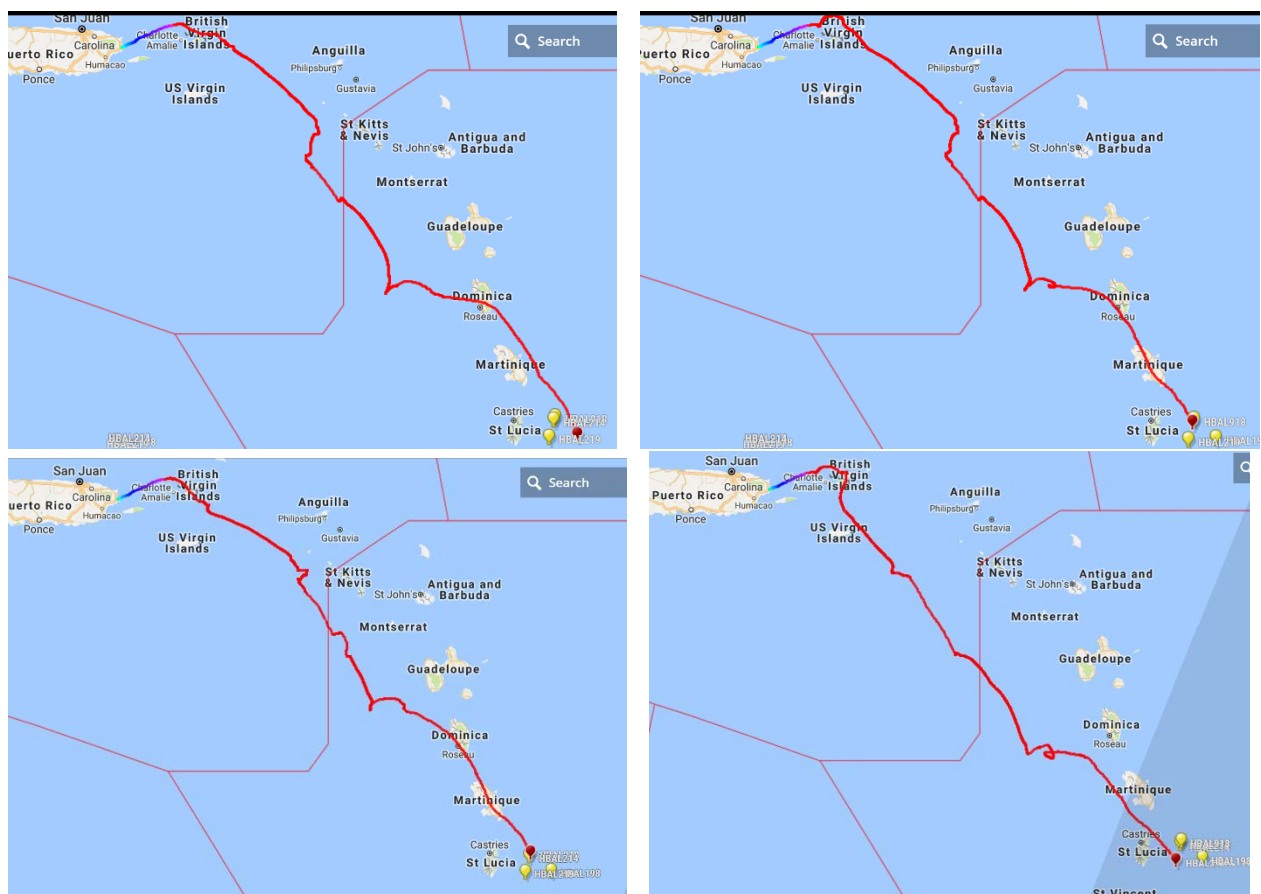
1 information as confidential under the NDA. Google's Project Loon mirrors Space Data's
2 technology (and, specifically, the Confidential Information disclosed) so closely that
3 replication could not have occurred without reference to the photographs taken or
4 contemporaneous, internal, Google notes or communications about Space Data's technology.
5 Google took detailed photographs for a reason. Further, the specificity and volume of trade
6 secrets provided to Google could not have been misused by relying solely on "unaided"
7 memory that was "unintentionally" retained. For example, the detail on the cost drivers
8 alone is not the kind of information that could qualify as a "residual," neither is the detail to
9 be obtained from the photographs of the NOC screens. Google has used Space Data's
10 Confidential Information.

11 Defendants' use of Space Data's Confidential Information, which includes, but is not
12 limited to, using Space Data's wind data and hover trade secrets to navigate Project Loon
13 balloons, are global in scale, spanning, for example, St. Lucia (*see* below), Columbia (crash
14 of a Loon balloon in March 2017), Australia (*see* below), Peru (*see* below), and the United
15 States (*see* below).

16 **Loon off of St. Lucia:**

17 The images below show an array of Project Loon balloons off of St. Lucia on March
18 28, 2017. As the tracking images show, Google launched these balloons from Puerto Rico
19 and navigated the array to St. Lucia. Google controlled this balloon array using Space Data's
20 Confidential Information, including Space Data's wind data and hover algorithm trade
21 secrets.





Source: <https://onelucian.com/2017/03/28/four-google-loon-balloons-spotted-east-of-st-lucia/> and from <https://www.flightradar24.com>.

Loon in Australia:

The image below shows a group of Project Loon balloons over Northern Australia circa late May-early June, 2017. Google launched these balloons from Puerto Rico, navigated the array to Peru, and then navigated the array to Northern Australia using Space Data's Confidential Information, including Space Data's wind data and hover algorithm trade secrets. While over Australia, the balloons "were taking part in navigational testing, using software algorithms that allow them to rise and fall to take advantage of different wind speeds and wind directions within the stratosphere." See <http://www.abc.net.au/news/2017-06-03/balloons-floating-over-australia-part-of-radical-internet-plan/8584738>.



See id.

Loon in Peru:

Google has been flying balloon arrays over Peru. As of mid-May 2017, Project Loon was providing internet connectivity to users in a flood ravaged region of Peru, with users having sent and received 160GB-worth of data, the equivalent of around 30 million instant messages, or two million emails. With respect to these Peruvian arrays, Google made public statements in February 2017 about its new “discoveries” relating to balloon hover. Google “hovers” using Space Data’s Confidential Information. As Google said:

Project Loon’s algorithms can now send small teams of balloons to form a cluster over a specific region where people need internet access. This is a shift from our original model for Loon in which we planned to create rings of balloons sailing around the globe, and balloons would take turns moving through a region to provide service. . . . In mid 2016, we started sending balloons from our launch site in Puerto Rico to hang out in Peruvian airspace—and they did,

1 some for as long as three months. We repeated the
2 experiments, and saw the same results: we had figured out
the stratospheric winds, over a particular region.

3 See [https://blog.x.company/how-project-loons-smart-software-learned-to-sail-the-winds-](https://blog.x.company/how-project-loons-smart-software-learned-to-sail-the-winds-ec904e6d08c)
4 [ec904e6d08c](https://blog.x.company/how-project-loons-smart-software-learned-to-sail-the-winds-ec904e6d08c).

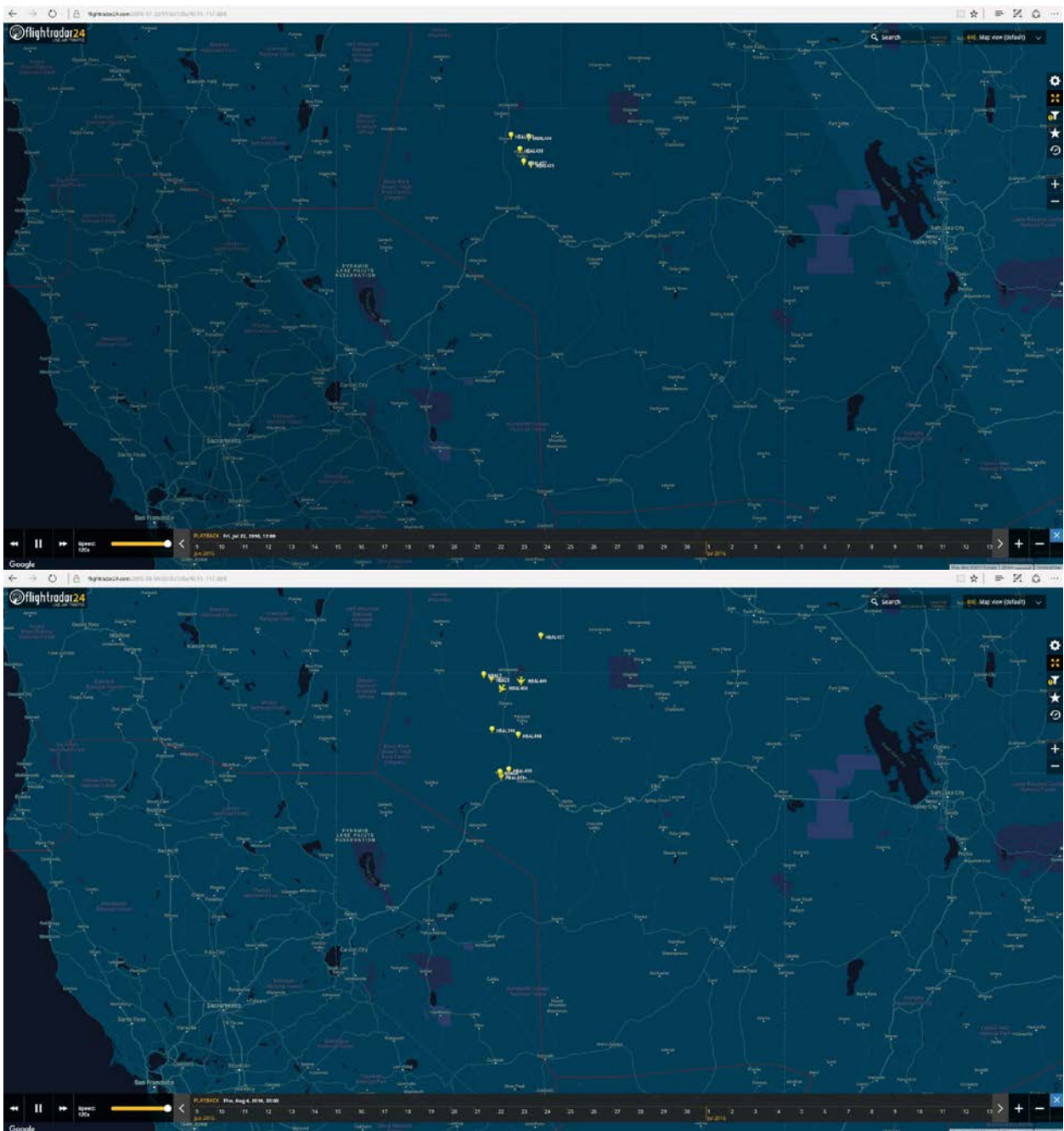
5 **Loon in the U.S.:**

6 Google is actively navigating balloons back into the U.S. from Peru, using Space
7 Data's Confidential Information, including Space Data's wind data and hover algorithm trade
8 secrets:

9 NEVADA City, Calif. July 6, 2017 – On Monday, reports of
10 a shiny object in the skies over Nevada County prompted
speculations about its origin. A check of our flight tracker
11 revealed it was HBAL187, a balloon used by Project Loon . .
12 . A spokesperson for Project Loon shed some light on the
balloon and its mission: "I can confirm this was a Project
13 Loon balloon . . . This particular balloon had been providing
service in Peru and after more than 100 days of flight was
14 about to be recovered by a trained recovery team and
brought back to our labs in California so that our engineers
can learn more about its flight."

15 See <https://yubanet.com/regional/project-loon-balloon-over-nevada-county/>.

16 Further, Google is actively flying arrays over the continental United States. As
17 shown in the July 22, 2016 and August 3, 2016 images from <https://www.flightradar24.com>
18 below, Google continues to fly arrays of Loon balloon's over the United States. Google is
19 doing so using Space Data's Confidential Information, including Space Data's wind data and
20 hover algorithm trade secrets.
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In September, 2016, a Google Loon balloon flew over Yellowstone National Park. See <http://fortune.com/2016/09/30/project-loon-yellowstone/>. Google's current U.S. activities include actively launching balloons from Winnemucca, Nevada, which then fly over the U.S., including Yellowstone National Park, using Space Data Confidential Information.

[illegible]

specifically discussed above were controlled and monitored using systems that employ Space Data's NOC altitude control and monitoring system trade secrets. These balloons also use Space Data's thermal management trade secrets.

To this day Defendants are still making decisions as to whether to continue to fund Project Loon, such as the decision to fly the balloon arrays used in the St. Lucian, Australian, Peruvian and American flights specifically identified above, based on Space Data's financial and technical trade secrets.

Defendants' use of Space Data's Confidential Information in violation of the NDA has been extensive and is ongoing.

Google also disclosed certain aspects of Space Data Confidential Information in Google's patent applications and asserted "ownership" of Space Data's intellectual property embodied in Confidential Information in violation of the NDA.

AMENDED (07/03/2018) SUPPLEMENTAL RESPONSE (5/29/18):

I. GOOGLE'S SPACE DATA ACQUISITION DUE DILIGENCE.

1 Beginning in the early fall of 2007, Google embarked on a rigorous Space Data pre-
2 acquisition due diligence. As set forth below, confidential and highly confidential
3 information Google learned from Space Data under NDA during its acquisition due diligence
4 was later used by Google in developing its own balloon-borne internet constellation, now

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INTERROGATORY NO. 21:

Separately for each asserted Trade Secret, identify each third-party to whom Space Data has ever disclosed the Asserted Trade Secret.

AMENDED (07/03/2018) RESPONSE:

Space Data refers to and incorporates by reference each of the foregoing General Objections. In addition to the foregoing General Objections, Space Data specifically objects to this interrogatory because amongst other things, the request's reference to "each third-party" renders it overly broad, unduly burdensome and not reasonably calculated to lead to

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21 Dated: July 3, 2018

Respectfully submitted,

22
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8 *Attorneys for Plaintiff*
9 SPACE DATA CORPORATION
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CERTIFICATE OF SERVICE

I, Darrell R. Atkinson, am a citizen of the United States and am employed in the County of San Francisco, State of California. I am over the age of 18 years and am not a party to the within action. My business address is Hosie Rice LLP, 600 Montgomery Street, 34th Floor, San Francisco, California, 94111.

On July 3, 2018, I served the following:

**PLAINTIFF SPACE DATA CORPORATION'S JULY 3, 2018 AMENDED
RESPONSES TO DEFENDANT GOOGLE LLC'S S INTERROGATORY NOS. 14
AND 21**

by email at San Francisco, California, addressed to the following parties:

Robert A. Van Nest
Christa M. Anderson
Matthew M. Werdegarr
Eugene M. Paige
Matthias A. Kamber
Ryan K. Wong
Thomas E. Gorman
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*Attorneys for Defendants
Alphabet Inc. and Google LLC.*

1 I certify under penalty of perjury under the laws of the State of California that the
2 foregoing is true and correct.

3 DATED: July 3, 2018

/s/ Darrell R. Atkinson
Darrell R. Atkinson